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## Large, Nonsaturating Magnetoresistance in ScSb and Progress on the Development of a Pressure Cell for Pulsed Magnetic Field.

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### Introduction

Non-magnetic extremely large magnetoresistance (XMR) is observed in a number of materials with diverse electronic and crystalline structures. Among XMR materials, rare-earth monpnictides  $RX$  ( $R$  = rare earth,  $X$  = Sb, Bi) with a simple rock-salt structure have drawn attention for exhibiting large nonsaturating magnetoresistance (MR), a resistivity plateau at low temperature and high field, and a field-induced upturn in resistivity [1-3]. We have previously reported a large nonsaturating MR in ScSb of 28 000% at  $T = 2$  K and  $B = 14$  T [1]. Here, we are interested in exploring the MR behavior at very high applied fields.

### Experimental

The experiment was carried out at the NHMFL Pulsed Field Facility with a 65 T magnet. Electrical resistivity was measured using a standard four-terminal configuration with current flow in the  $ab$  plane and magnetic field perpendicular to current direction.

### Results and Discussion

We observed large, non-saturating MR of  $\sim 271$  000% at 1.24 K and 60 T (Fig. 1). The Shubnikov-de Haas (SdH) oscillation frequencies extracted from the MR data agree well with our previous study at  $B > 14$  T [1] (Fig. 2). However, a new SdH peak was observed near 3 kT (labeled by \* in Fig. 2).

In addition to our work in ScSb, we had made significant progress on the setup process of a new non-metallic miniature diamond anvil pressure cell designed by Dr. Sun and Dr. Balakirev. This progress will be useful for future electrical transport measurements at the Pulsed Field Facility.

### Conclusions

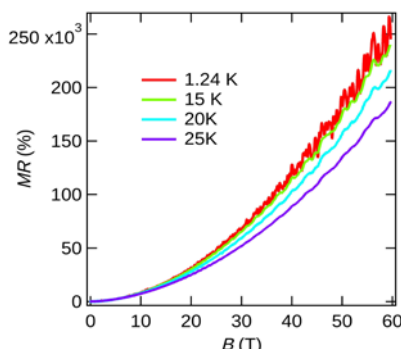
We have studied the MR of ScSb. The MR is nearly quadratic in field and nonsaturating at 60 T. Shubnikov-de Haas oscillations with a rich frequency spectrum are clearly visible at different temperatures.

### Acknowledgments

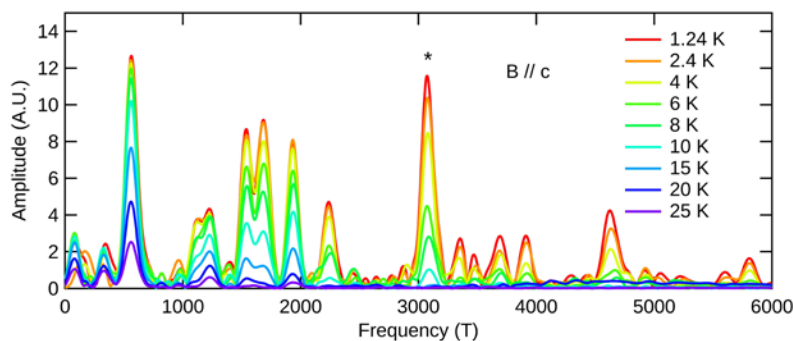
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### References

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**Fig.1** Magnetoresistance with the field applied along the  $c$  axis at different temperatures.



**Fig.2** FFT spectra of SdH quantum oscillations at different temperatures with  $B // c$ .